WHAT IS CLAIMED IS:

1. A spring drive unit comprising: a base; a rotatable shaft mounted to the base; a spring mounted to the base and having a fixed end and a rotatable end; and a gear transmission of given drive ratio between two gears thereof, operatively connected at a first one of the two gears to the rotatable end of the spring and operatively connected at a second one of the two gears to the rotatable shaft, thereby applying the given drive ratio between the spring and the shaft for altering the force applied between the shaft and the spring and for altering the ratio of the shaft rotating speed to the spring rotating speed.

2. The spring drive unit of claim 1, wherein the spring is a coil spring.

3. The spring drive unit of claim 1, wherein the spring is a flat spiral spring.

4. The spring drive unit of claim 1, further comprising: a band transmission of varying drive ratio between two gears thereof, operatively connected at a first one of the two gears to the rotatable end of the spring and operatively connected at a second one of the two gears to the shaft, thereby applying the varying drive ratio between the spring and the shaft for varying the force applied between the shaft and the spring and for varying the ratio of the shaft rotating speed to the spring rotating speed.

5. The spring drive unit of claim 4, wherein the spring is a coil spring.

6. The spring drive unit of claim 4, wherein the spring is a flat spiral spring.

7. A spring drive unit comprising: a base; a rotatable shaft mounted on the base; a spring mounted to the base and having a fixed end and a rotatable end; and a band transmission comprising two gears and having a varying drive ratio therebetween, the band

transmission operatively connected at a first one of the two gears to the rotatable end of the spring and operatively connected at a second one of the two gears to the shaft, thereby applying the varying drive ratio between the spring and the shaft for continuously varying the force applied between the spring and the shaft and for varying the ratio of the shaft rotating speed to the spring rotating speed.

8. The spring drive unit of claim 7, wherein the spring is a coil spring.

9. The spring drive unit of claim 7, wherein the spring is a flat spiral spring.

10. A window cover system of the type comprising: a base; an extendible window cover; and lift means including lift cords attached to the cover for raising and lowering the window cover to selected positions, the improvement comprising:

a spring drive unit connected to the lift cords for assisting the raising and lowering of the cover to selected positions, the spring drive unit comprising a spring mounted to the base and having a fixed end and a rotatable end; and a gear transmission of fixed drive ratio; the gear transmission operatively connected at one end to the rotatable end of the spring and operatively connected at the opposite end to the lift means, thereby applying the fixed ratio between the spring and the lift cords, for altering the ratio of the distance traversed by the cover to the distance traversed by the rotatable end of the spring and for altering the force applied between the cover and the spring; and

the gear transmission having inherent friction opposing movement of the lift cord-supported cover and thereby tending to maintain the cover at the selected positions.

11. The spring drive unit of claim 10, wherein the spring is a coil spring.

12. The spring drive unit of claim 10, wherein the spring is a flat spiral spring.

13. The spring drive unit of claim 10, further comprising: a band transmission of substantially continuously varying drive ratio, operatively connected at one end to the rotatable end of the spring and operatively connected at the opposite end to the lift means, thereby applying the substantially continuously varying drive ratio between the spring and the lift cords for substantially continuously varying the ratio of the distance traversed by the cover to the distance traversed by the rotatable end of the spring and for substantially continuously varying the force applied between the cover and the spring.

14. The spring drive unit of claim 13, wherein the spring is a coil spring.

15. The spring drive unit of claim 13, wherein the spring is a flat spiral spring.

16. A window cover system of the type comprising: a base; an extendible window cover; and lift means including lift cords attached to the cover for raising and lowering the window cover to selected positions, the improvement comprising:

a spring drive unit connected to the lift cords for assisting the raising and lowering of the cover to selected positions, the spring drive unit comprising a spring mounted to the base and having a fixed end and a rotatable end; and a band transmission of substantially continuously varying drive ratio, operatively connected at one side thereof and operatively connected at the opposite side thereof to the lift means, thereby applying the substantially continuously varying drive ratio between the spring and the lift cords for substantially continuously varying the ratio of the distance traversed by the cover to the distance traversed by the rotatable end of the spring and for substantially continuously varying the force applied between the cover and the spring.

17. The spring drive unit of claim 16, wherein the spring is a coil spring.

18. The spring drive unit of claim 16, wherein the spring is a flat spiral spring.

19. The combination of any of claims 3, 6, 9, 12, 15 or 18, wherein the spring is a flat spring having a cove of selected curvature which varies along at least a longitudinally extending section of the spring for providing a force which varies proportional to the curvature as the rotatable end of the spring winds and unwinds.

20. The combination of claim 19, the transverse section of the spring having opposite edge sections and an intermediate section; and at least a longitudinally extending section of the spring having a curvature of the opposite edge sections thereof which is opposite the curvature of the intermediate section, for reducing the torque provided along the longitudinal section of the spring.

21. The combination of claim 20, wherein the relative curvature of the edge sections and the intermediate section varies along the longitudinal section of the spring.

22. The combination of any of claims 3, 6, 9, 12, 15 or 18, wherein the spring is a flat spring having holes of selected size and location along at least a longitudinally extending section of the flat spring for providing a force which varies proportional to the cross-sectional area of the spring as the flat spring winds and unwinds at the rotatable end.

23. The combination of claim 19, further comprising a magnetic brake comprising magnetized regions at selected positions along the flat spring; and a magnet brake member mounted adjacent the spring, the magnetism of the magnetized regions and the brake member selected for exerting braking force against the flat spring at the selected positions.

24. The combination of claim 22, further comprising a magnetic brake . comprising magnetized regions at selected positions along the flat spring; and a magnet brake member mounted adjacent the spring, the magnetism of the magnetized regions and the brake member selected for exerting braking force against the flat spring at the selected positions.

25. The combination of claim 19, further comprising a detent brake comprising holes at selected positions along the flat spring; and a detent brake member biased against the flat spring for engaging the holes and exerting braking force against the flat spring at the selected positions.

26. The combination of claim 22, further comprising a detent brake comprising holes at selected positions along the flat spring; and a detent brake member biased against the flat spring for engaging the holes and exerting braking force against the flat spring at the selected positions.

27. The spring drive system of any of claims 1, 3, 6, 9, 12, 15 or 18, comprising: at least a second storage drum, each said second storage drum having a flat spring wound thereon; and said second flat springs extending to and wound together in overlapping fashion on the output drum with the first flat spring, such that the system torque at the output drum is a multiple of the torques associated with the individual flat springs.

28. The spring drive system of claim 27, wherein the storage drums are arranged in approximately a straight line.

29. The spring drive system of claim 27, wherein the output drum and the storage drums are arranged in approximately a straight line.

30. The spring drive system of claim 27, wherein the storage drums are arranged in a cluster.

31. The spring drive system of claim 27, wherein the output drum and the storage drums are arranged in a cluster.

32. The spring drive system of claim 27, wherein at least one of the flat springs is adapted for imparting a torque component to the system torque which varies along the length of the said one spring.

33. The spring drive system of claim 27, wherein at least one of the flat springs has a cove or transverse curvature which selectively varies along the length of the spring for providing a torque which varies proportional to the transverse curvature of the said one spring at a position closely adjacent the output drum.

34. The spring drive system of claim 33, the transverse curvature as the spring winds and unwinds, the transverse curvature of the spring having opposite edge sections and an intermediate section; and at least a longitudinally extending section of the spring having a curvature of the opposite edge sections which is opposite the curvature of the intermediate section, for reducing the torque provided along the longitudinal section of the spring.

35. The spring drive system of claim 22, wherein at least one of the flat springs has at least one hole therein for providing a torque proportional to the transverse size of the hole and the resulting effective width of the said one flat spring when the hole is positioned closely adjacent the output drum.

36. The spring drive system of claim 27, wherein at least one of the flat springs has holes therealong for providing a torque which varies proportional to the transverse size of the holes and the resulting effective width of the said one flat spring when one or more holes is positioned closely adjacent the output drum.

37. A window cover system comprising: a base; a rotatable pulley mounted to the base; an extendible window cover; at least one lift cord attached to the window cover and wrapped around the pulley and depending from the base for extending and retracting the

extendible cover; a plurality of spring drives, connected to the pulley for assisting the extending and retracting of the cover; the individual ones of the spring drives comprising a first storage spool, a second output spool, and a flat spring wound on and between the two spools; and wherein the output spool is operatively connected to the pulley.

38. A window cover system comprising: a base; a rotatable pulley mounted to the base; an extendible window cover; at least one lift cord attached to the cover and wrapped around the pulley for extending and retracting the extendible cover; at least one spring drive, connected to the pulley for assisting the extending and retracting of the cover; the spring drive comprising a first, storage spool, a second, output spool, and at least a plurality of flat springs wound on and between the two spools; and wherein the output spool is operatively connected to the pulley.

39. The window cover system of claim 37 or 38, further comprising: a crank mechanism operatively connected to the pulley for rotating the pulley to extend and retract the associated cover.

40. The window cover system of claim 37 or 38, further comprising: a crank mechanism operatively connected to the pulley for providing access to the pulley at a distance from the pulley for rotating the pulley to extend and retract the associated cover.

41. The window cover system of claim 40, the crank mechanism comprising an elongated crank comprising a plurality of hinged sections; the crank having first and second ends; a shaft having first and second ends and operatively connected at the first end to the output spool of the spring for rotation therewith; a universal joint mounting the first end of the crank to the second end of the shaft; the shaft oriented at an angle such that when the crank is pivotally moved via the universal joint into an acute angle orientation relative to the shaft, the crank can be rotated about its longitudinal axis without propeller rotation, thereby

rotating the pulley to raise or lower the window cover; and such that at rest the angle betrween the crank and the shaft is sufficiently large such that rotation of the shaft is accompanied by propeller rotation of the crank about its longitudinal axis thereby which acts as a brake against movement of the pulley.

42. The window cover system of claim 40, the crank mechanism comprising an elongated crank comprising a plurality of hinged sections; the crank having first and second ends; a shaft having first and second ends and operatively connected at the first end to the output spool of the spring for rotation therewith; a universal joint mounting the first end of the crank to the second end of the shaft; the shaft mounted to the housing at a non-horizontal orientation such that at rest the crank depends relative to the shaft at an angle sufficiently small to permit rotation of the crank about its longitudinal axis without propeller rotation about the shaft.

43. The window cover system of claim 37 or 38, further comprising an automatic braking device, comprising means connecting the pulley to the output spool such that pulling on the cord extends and retracts the cover; and releasable lock means locking the wheel against movement when the cord is not pulled and releasing from the wheel when the cord is pulled.

44. The window cover system of claim 43, wherein the releasable lock means comprises a plurality of holes in the periphery of the pulley; a pin or screw mounted in the housing adjacent the pulley for engaging the holes to prevent rotation of the pulley; a spring mounted between the housing and the pulley shaft for normally biasing the pulley and associated holes into engaging the pin or screw; and the pulley cord depending from the pulley such that pulling on the pulley cord to operate the window cover compresses the spring and moves the pulley away from locking engagement with the pin or screw, permitting rotation of the pulley.

45. The window cover system of claim 37 or 38, further comprising: a first shaft to which the output spool is operatively connected for rotation therewith and a second shaft on which the pulley is mounted; the two shafts being oriented transverse to one another; and a pair of meshed bevel gears mounted one on each shaft and connecting the shafts for rotation together.

46. The window cover system of claim 37 or 38, further comprising: a cord pulley system comprising a pair of reverse oriented, conical spools having longitudinal axes and being rotatably mounted on shafts and having spiral grooves winding longitudinally thereon; a cord wound on the grooves of and between the spools; and one cone-mounting shaft being operatively connected to the output spool for rotating with the output spool and the other cone-mounting shaft being operatively connected to the pulley for rotating with the pulley; whereby the relative angular rotation speed of the output spool and the pulley during winding and unwinding of the lift cord is determined by the associated longitudinal positions of the cord along the conical spools and the diameters of the conical spools at said positions.

47. The window cover system of claim 46, wherein the cord pulley system is direct drive.

48. The window cover system of claim 46, wherein the cord pulley system is varied ratio.

49. The window cover system of claim 37 or 38, further comprising recoiler means suppressing uncontrolled expansion of the spring and braking the spring drive.

50. The window cover system of claim 49, the recoiler means comprising a rotatable recoiler roll comprising a shaft; a hub mounted on the shaft; and a plurality of resilient fins extending generally radially from the hub; the recoiler roll being positioned

adjacent and contacting a spool or spring of the spring drive, for suppressing uncontrolled radial expansion of the spring and for braking the spring drive.

51. The window cover system of claim 49, the recoiler means comprising a recoiler spool mounted for rotation with the storage spool; a wire or cord wound on the recoiler spool; and a coil tension spring having first and second ends, the first end thereof mounted to the end of the wire and the second end thereof fixedly mounted to the window cover housing, for suppressing uncontrolled radial expansion of the spring and for braking the spring drive.